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LEGAL ASPECTS AND IMPLICATIONS OF CLIMATE CHANGE

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ABSTRACT

Climate Change is one of the major challenges humanity is facing. It can fundamentally impact our reality, lifestyle and could question our existence as well. Adequate legal regulations are needed to address these challenges. Without legislative changes and their implementation, it will be impossible to solve the issues that humanity is facing. The paper describes major causes that lead to climate change and answers to the questions related to the ongoing and future legal regulations

KEYWORDS: Climate, Legal, Implication

INTRODUCTION TO CLIMATE CHANGES

Generally, Climate Change is referred to as a long-term significant impact on the weather of a particular region or on a global level due to prevailing winds, topographical reasons, ocean currents and much more. Climate change under IPCC[1] is referred to a change in the state of the climate that can be identified by changes in the mean and/or the variability of its properties and that persists for an extended period, typically decades or longer. Further, Climate change is also defined as „significant and persistent change in the mean state of the climate or its variability", caused by changes in the environment, including „anthropogenic modification of the atmosphere.[2]

Is Climate Change a crisis in the current situation? It 'IS.' Climate has been adversely affected since the Second World War as the global economy tends to have grown by more than tenfold.[3] The situation has become more prominent in the past two decades when the Industrial Revolution took place. It was the Industrial Revolution of the 1950s when there was a seemingly visible shift towards use of machines, fossils, fuel gas, etc. by the general public. It has proved to make the lives of the common men easy but it is depleting the environment by breaking records for emitting carbon dioxide and other gases.[4]

Is this just an issue of the present hour? Will this only affect the current living generation? The answer to these questions is not affirmative. „Climate Change is one of the most important global environmental problems facing the world today", this issue was raised at

1 The Intergovernmental Panel on Climate Change.
2 Climate Change and the Law [1] [2] Human Activities, in the United States and Elsewhere, Contribute No Longer Be Avoided. 3 On an International Level, for Example, the In – *Professor and Bock Chair in Agricultural Law, Department of Agricultural, 2010[3]".
3 European Environment Agency (EEA), 2019.
4 C.A.S. Hall et al. / Energy Policy 64 (2014) 141-152.

the United Nations Climate Change Conference (Copenhagen) in December 2009. Moreover, Greta Thunberg, a Swedish environment activist also stated that humanity is facing an existential crisis due to climate change and she quotes, „The empty promises are the same and the inaction is the same".[5] Thereby proving that due to the rapid rate of environmental deterioration the life on earth may come to an end. Many countries and states have come up together to resolve this matter by limiting their Carbon Dioxide emissions and other terms; as listed in the Paris Agreement. Thus a question arises whether we will be able to protect our environment and that, are we able to restrict the said Climate Change?

CAUSES OF CLIMATE CHANGE

The emission of gases, especially Carbon Dioxide is primarily due to the excessive burning of fossil fuels like coal and oil which in turn have increased the temperature of the earth's surface. It is also observed that the global mean surface is now about 1° Celsius warmer than pre-industrial times. These gases are released into the air and when sunlight passes through the earth's atmosphere and some amount of heat produced by the sunlight gets trapped; the planet gets warmer resulting in the „Greenhouse Effect".[6]

It is not only human activities that are the cause of climate change. There are some natural causes and some other causes that might affect climate adversely in the future. Various organizations such as UNICEF, Intergovernmental Panel on Climate Change (IPPC), UN Environment Programme (UNEP) and World Meteorological Organization (WMO), UNFCCC, and other international organizations have listed the causes of climate change.

NATURAL CAUSES

Greenhouse Gas Effect is termed to be the main cause of Climate Change Greenhouse does not only have a local impact on the environment but it is a global cause „positive radiative forcing" meaning thereby, when Earth receives more energy from sunlight in comparison to the energy received in Space. This leads to rising in earth's temperature mainly due to the gasses so emitted by humans including carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O). Even IPCC stated in 2007, „[w]arming of the climate system is unequivocal".

As per World Meteorological Organization and Global Climate Indicators 2018 was observed to be the fourth warmest year on record for the past four years that is 2015-2018 stating that levels of carbon dioxide emissions are the key drivers for climate change. The Sea Level is drastically increasing every year. The gases such as carbon dioxide emitted get dissolved in the seawater, decreasing the oceans' pH level known Ocean Heat and Acidification leads to ocean warming and deoxygenating which is observed to be ten times faster as compared to the last 300 million years.[7]

The Cryosphere consists of ice glaciers, snow, ice sheets, frozen groundsheets, rivers, lakes, etc. and due to climate change; there is a deleterious impact on the water cycle, surface gas exchange, and sea level. Likely, the annual period of surface melt on Arctic perennial sea ice lengthened by 5.7 ± 0.9 days per decade over the period 1979–2012 and the annual Antarctic sea ice extent increased at a rate of between 1.2 and 1.8% per decade (0.13 to 0.20 million km2 per decade) between 1979 and 2012. In addition to that, the strength of the sun, the change in earth's orbit, or the change in earth's axis of rotation and its orientation are some of the natural causes that are not in the human hands to be controlled. What humans can control is the Man-made causes of Climate Change.[8]

MAN-MADE CAUSES FOR CLIMATE CHANGE

Man-made causes for the change in climate include the burning of fossil fuels; which has led to an upward trend in emissions of carbon dioxide, methane, and other greenhouse gasses, deforestation in

5 United Nation Climate Action Summit, 2019.

6 Hu, Y., Hall, C., Wang, J., Feng, L., Poisson, A., 2013. Energy return on investment (EROI) on China's conventional fossil fuels: historical and future trends. Energy, 1–13.

7 IUCN (International Union for Conservation of Nature) (2020. December). https://www.iucn.org

8 Vaughan, D.G., J.C. Comiso, I. Allison, J. Carrasco, G. Kaser, R. Kwok, P. Mote, T. Murray, F. Paul, J. Ren, E. Rignot, O. Solomina, K. Steffen and T. Zhang, 2013: Observations: Cryosphere. In: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5_Chapter04_FINAL.pdf. Page 319-320.

tropical areas and other areas; leads to anthropogenic carbon dioxide emissions and disturbance in livestock, crop production, land uses and most importantly high use of Nitrogen Oxide Concentrations as fertilizers increasing chemical content in food crops, industrialization; which is the main cause of air pollution, water pollution, and noise pollution further degrading the environment and aerosols; which are the particles that are suspended in the atmosphere due to high emissions of Chlorofluorocarbons (CFCs).[9]

POSSIBLE CAUSES FOR CLIMATE CHANGE

Amazon Forest had a blazing rampage termed as „the lungs of the world". which had a destructive impact on Climate. The causes of the Amazon Forest Fire, 2019 that were illegal deforestation, degradation, big industrial and infrastructural projects, government cutting budget for environmental policies, etc. indirectly became the cause for changes in climate.[10]

On the other hand, Australia Forest Fire, 2020 was the worst in smoke pollution further rated Canberra as the third worst city in terms of air quality. The Bushfire in Australia leads to a rise in smoke fumes, plume cool, and heavy downbursts resulting in a high quantum of deaths. Apart from this, calamities like drought, heatwaves, cyclones, and floods can also be termed as one of the causes indirectly affecting climate change.

THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE

The Intergovernmental Panel on Climate Change (IPCC) is a scientific body which under the auspices of the United Nations was established in the year 1988 by the World Meteorological Organization (WMO) and the United Nations Environmental Programme (UNEP) which supports the United Nation Framework on Climate Change that is deemed to be the main international treaty on climate change. IPCC reports to UNFCCC which contains 'Summary for Policymakers' that is subject to approval by all the delegates from participating governments.

The structure of IPCC includes committees that will be working on various tasks which are as follows:

- **Working Group I** – deal with The Physical Science Basis which will assess the physical science related to climate change.[11]
- **Working Group II** – deals with Climate Change Impacts, Adaption, and Vulnerability which will assess the vulnerability related to socio-economic and natural systems of climate change and its impacts whether positive or negative if adapted.[12]
- **Working Group III** – deals with Mitigation of Change where mitigation and policies would be assessed and methods will be laid down for removing greenhouse emissions and the impact of such emission from the atmosphere.[13]
- **Task Force on National Greenhouse Gas Inventories** calculates and develops methods for reduction and removal of greenhouse gas emissions.[14]

UNITED NATION FRAMEWORK ON CLIMATE CHANGE

The United Nations Framework Convention on Climate Change (UNFCCC), the purpose of which was to stabilize emissions of greenhouse gases, was adopted in 1992 and entered into force in 1994.[15] The Convention establishes several means through which developing and developed countries could cooperate to meet the Convention's objectives. These means include financing arrangements and technology transfers.[16]

The Convention includes various important articles related to Climate Change.[17] They are as follows;

- **Article 3(1)** – This article mentions that the Parties should act in a way to protect the climate and combat its adverse effects based on 'common but differentiated responsibilities.'

9 Muller R. (2013, June 3). Why We Need to Help the Chinese Frack. CNBC. Retrieved November 11, 2014, from https://www.cnbc.com/id/100784859#.

10 Longo, M., Saatchi, S., Keller, M., Bowman, K., Ferraz, A., Moorcroft, P. R., et al. (2020). Impacts of degradation on water, energy, and carbon cycling of the Amazon tropical forests. Journal of Geophysical Research: Biogeosciences, 125, e2020JG005677. https://doi.org/10.1029/2020JG005677.

11 The Intergovernmental Panel on Climate Change. (2020, December).https://www.ipcc.ch/working-group/wg1/.

12 The Intergovernmental Panel on Climate Change. (2020. December).https://www.ipcc.ch/working-group/wg2/.

13 The Intergovernmental Panel on Climate Change. (2020. December).https://www.ipcc.ch/working-group/wg3/.

14 The Intergovernmental Panel on Climate Change. (2020. December).https://www.ipcc.ch/working-group/tfi/

15 United Nations Climate Change. (2020.December). https://unfccc.int/.

16 Technology Transfers Under the United Nations Framework Convention on Climate Change. 2006.

17 Leach & Shapiro, 1986.

- **Article 4** – This provision states that all parties must make a general commitment to address climate change.
- **Article 4(1)** – This provision relates to taking into account certain responsibilities „to promote and cooperate in the development, application, diffusion, including transfer, of technologies, practices, and processes that control, reduce, or prevent anthropogenic emissions of greenhouse gases."
- **Article 4(5)** – This provision relates to the practical steps to promote, facilitate and finance so that the developed countries and developed parties take necessary measures for the enhancement of endogenous capacities and technologies of developing country Parties.
- **Article 4(7)** – This provision ensures that commitments made under the convention are effectively implemented.

CLIMATE CHANGE AND CHILDREN-UNICEF

UNICEF states that children are the least responsible for all the harm done to the environment which has led to a high degree of climate change. Due to climatic factors like droughts, floods, change in the pattern of global rainfalls has led to failures in agricultural produce further leading to a rise in the prices of such commodities. This has affected the health of children adversely as the children are now not able to have a healthy living and are prone to diseases such as dengue, malaria, and pneumonia, etc.[18]

IMPACTS OF CLIMATE CHANGE

1. IMPACT OF CLIMATE CHANGES ON WORLD AT LARGE: Climate Change has been adversely affected for a while now which is clear from the weather patterns to rising sea levels and much more.

- **Socio-Economic Changes** for Humans: The impact of Climate Change has led to substantial disruption in the areas of agriculture, water, and energy supplies, and most importantly food and human health. Due to climate change, there is a change in rainfall patterns which has led to a disturbance in the agricultural ecosystem. Such changes also affect hydrology which includes underground water level leading to saline and brackish water, increase in variability of precipitation,[19] degradation in water quality of lakes, rivers, marshes, etc.

According to the analysis of the average and lowest temperatures in January, for 12 years from 1987 to 1998, done for the study on winter barley cultivation regions following global warming by the National Academy of Agricultural Science,[20] the safe zone for winter barley cultivation has shifted far north.[21]

- **Behavioral Changes:** The impact of climate change has forced not only individuals, corporate firms, government but also the economy at large as climate change is on the verge of destroying the environment. Probably life on earth comes to a pause by 2030. The behavioral change requires a study on macro as well as a micro level including extreme weather events, air and soil pollution, interpersonal and intergroup conflict, and possibly psychological distress increase with rising temperature.[22]

2. IMPACT ON WILDLIFE: Climate Change has affected wildlife from both polar and tropical areas. The habitats are relocating because of change in climate as the climate has become less suitable because of warmer temperature in polar areas, less or uneven precipitation in tropical areas, drying of water bodies, etc.[23]

Statistics state that species living on the land are moving an average of more than 10 miles per decade, while marine species are moving four times faster. Some individual species are moving far more quickly.[24] Similarly, in West Greenland, the mortality of young caribou is rising because the plants that mothers eat in calving season are no longer abundant enough.[25]

18 United Nations Children's Fund (UNICEF) (2007. December).https://www.unicef.org/publications/files/Climate_Change_and_Children.pdf

19 International Groundwater Resources Assessment Centre. (2020. December)

20 NAAS, 2000.

21 Attri & Rathore, 2010.

22 Evans, G. W. (2019, January 4). Projected Behavioral Impacts of Global Climate Change. Annual Review of Psychology. Annual Reviews Inc. https://doi.org/10.1146/annurev-psych-010418-103023.

23 European Wildlife. (2020. December). https://www.eurowildlife.org/climate-change/.

24 Convention on the Conservation of Migratory Species of Wild Animals. Half of All Species Are on the Move—And We're Feeling It. (2020. December). https://www.cms.int/en/news/half-all-species-are-move%E2%80%94and-were-feeling-it.

25 I. H. Myers-Smith, B. C. Forbes, M. Wilmking, M. Hallinger, T. Lantz, D. Blok, K. D. Tape, M. Macias-Fauria, U. Sass-Klaassen, E. Lévesque, S. Boudreau, P. Ropars, L. Hermanutz, A. Trant, L. S. Collier, S. Weijers,

3. IMPACT ON PLANTS: Climate Change has adversely affected plants, their soil compositions, harming the pH level of soil, plants nutrient availability, etc.[26] The quality of litter decreases with drought in all biomes, even if total litter fall remains constant, partly because of elevated nutrient resorption prior to leaf senescence.[27] These changes not only slow down mineralization rates, nutrient release, and nutrient cycles that may increase or decrease plant diversity through species turnover, depending on environmental conditions but also affect CO2 release to the atmosphere and therefore feedback to climate.[28]

4. IMPACT ON INDIVIDUALS: Climate Change has a very drastic and negative impact on individuals. For further clarification, it is divided into four heads:

- **Health:** With the increase of carbon pollution in the environment, human health has been degrading continuously. The subsequent increase in ozone layer depletion which decreases the air quality and is linked with heat waves has a huge impact on health creating increasing problems of asthma (children and adults), myocardial infarction, mental ailments, etc.[29] The World Health Organization estimates around 7 million people worldwide die due to air pollution and around 2% of people face mental stress and anxiety ailments. Further, McMichael et al. (2004) calculated those approximately 166,000 deaths per year and 5.5 million disability-adjusted life years (a measure of healthy life years lost) resulted from climate change in the year 2000.[30]
- **Population:** The growing population has been a driving force for the adverse effects on Climate change. It is observed and estimated that there is a drastic increase in carbon emissions from the 1990s to the 2020s. The per capita income is increasing simultaneously with a population that declines availability of natural as well as manmade resources: agricultural produce, availability of fossil fuels, etc. It was noted that only 2-3% of people worldwide use contraception resulting in an increased population which is due to lack of education and family planning, further creating an ecological imbalance.
- **Home:** Due to the melting of glaciers, increasing heat waves, global warming, and an increase in sea level have forced individuals to relocate. Miami, U.S.A. has been adversely affected by the sea-level leading to „climate gentrification", creating large disparities between its native communities.
- **Food:** Climate change has a direct impact on food and crop production because of changes in rainfall patterns which lead to floods, droughts, etc., and warmer/cooler temperatures which lead to an adverse impact on growth patterns of the crops and a decrease in the nutritional value of the crops. For instance, it was summarized in an experimental findings[31] wheat and rice that indicated decreased crop duration (and hence yield) of wheat as a consequence of warming and reductions in yields of rise of about 5% i.e. 0°C-1°C rise above 32.[32] (make corrections)

5. IMPACT ON COMPANIES AND TECHNOLOGY

Impact of Climate Change on corporations and technology leads to risks for interested parties such as investors, lenders, equity holders, insurance underwriters, etc. The adverse impact encompasses two kinds of risks.[33]

J. Rozema, S. A. Rayback, N. M. Schmidt, G. Schaepman-Strub, S. Wipf, C. Rixen, C. B. Ménard, S. Venn, S. Goetz, L. Andreu-Hayles, S. Elmendorf, V. Ravolainen, J. Welker, P. Grogan, H. E. Epstein, D. S. Hik, Shrub expansion in tundra ecosystems: Dynamics, impacts and research priorities. Environ. Res. Lett. 6, 045509 (2011).

26 F. I. Pugnaire, J. A. Morillo, J. Peñuelas, P. B. Reich, R. D. Bardgett, A. Gaxiola, D. A. Wardle, W. H. Van Der Putten, Climate change effects on plant-soil feedback and consequences for biodiversity and functioning of terrestrial ecosystems. Sci. Adv. 5, eaaz 1834 (2019) Downloaded.

27 Suseela, V., Tharayil, N., Xing, B., & Dukes, J. S. (2015). Warming and drought differentially influence the production and resorption of elemental and metabolic nitrogen pools in Quercus rubra. Global Change Biology, 21(11), 4177–4195. https://doi.org/10.1111/gcb.13033.

28 Peguero, G., Sol, D., Arnedo, M., Petersen, H., Salmon, S., Ponge, J. F., … Peñuelas, J. (2019). Fast attrition of springtail communities by experimental drought and richness–decomposition relationships across Europe. Global Change Biology, 25(8), 2727–2738. https://doi.org/10.1111/gcb.14685

29 Pradyumna, A., & Guinto, R. (2016, January 30). Climate change and health. The Lancet. Lancet Publishing Group. https://doi.org/10.1016/S0140-6736(16)00171-9

30 Wing, S., Horton, R. A., Marshall, S. W., Thu, K., Tajik, M., Schinasi, L., & Schiffman, S. S. (2008). Air pollution and odor in communities near industrial swine operations. Environmental Health Perspectives, 116(10), 1362–1368. https://doi.org/10.1289/ehp.11250

31 Gregory et al. (1999)

32 Gregory, P. J., Ingram, J. S. I., & Brklacich, M. (2005). Climate change and food security. In Philosophical Transactions of the Royal Society B: Biological Sciences (Vol. 360, pp. 2139–2148). Royal Society. https://doi.org/10.1098/rstb.2005.1745.

33 Mori, N., & Chiba, Y. (2017). Impact of climate change–transforming business behavior in favor of sustainable

- **Transition risks** mainly include risks related to climate change mitigation in the case of reduction in greenhouse emissions. These risks also include risks related to the formation of legal policies and technological risks where technology is not efficiently reducing greenhouse gas emissions; market risks where due to climate change there is either shortage of supply or demand of certain commodities; and reputational risks where the corporations which harm the climate tend to lose their market share.
- **Physical Risk** whose frequency depends on the events of climate change. These include acute risks which are contingent and take place due to events such as floods, cyclones. Droughts etc. and chronic risks relate to the increase or decrease in sea level, temperature, etc.

The caveats are more aware of the current climate change situation. The demand and supply of commodities shift if any harm to the environment is found. The corporations now have a corporate social responsibility to abide by to protect the environment from further depletion.[34]

REAL AND ADVERTISED NEEDS

Climate Change will soon deteriorate the environment to a level where we will have to live with minimal resources. There lies a difference between the real and advertised needs. As per the advertised needs, it is stated that there lies room for improvement. Is it true? The answer to this is there is a time for improvement provided we make the right decisions pretty 'soon.' The real needs include awareness, education, follow-up of policies laid by the government to preserve and protect the climate from changing drastically. There exist three main factors which help us to study the needs viz. the goals of interest groups, what is the nature of properties – physical or technical; concerning the problems faced, and what regulation nodes that are compatible enough with the regulatory tools available. [35]

MEASURES RELATED TO ENVIRONMENTAL UPGRADATION

The change needs to be made soon and action must be taken sooner. The various measures which may help in environmental degradation are very simple; any individual contributing a minimal effort can make a big change. Every native of the society can contribute by planting at least one tree, adopting or feeding any one animal regularly, do not slaughter animals and shed trees for commercial purposes, follow the concept of recycle-reuse-reduce, choose public transportations or cycles as a mode of transportation, shift from the use of non-biodegradable resources to biodegradable resources and most importantly by not polluting the environment. Taking these environmental upgrades with respect to corporate and governmental organizations, it must be ensured that industries treat their waste before disposing of, utilizing natural resources judiciously, abide by all rules and regulations laid down under the law, etc.

LEGAL CHECK ON CLIMATE CHANGE

With the ongoing destruction and harm to the climate, formulating a legal check would play a crucial role in the governance of such damage. Legal Provisions would ensure that an act harming the environment/climate change is strictly prohibited and rules and regulations for the same are formulated. It is not one nation's duty to protect or work towards the protection of climate change, but the whole world needs to join hands together and formulate and profess laws.

Generally, every nation governs Climate Change through:

- Environmental Laws
- International Environmental Laws
- Administrative Laws
- International Trade Laws.

In the research ahead, the above-mentioned laws are discussed in general and then the implementation and practice of such laws by certain countries are discussed to get a clearer picture of the status of the world concerning climate change.

ENVIRONMENTAL LAWS

Every country possesses certain domestic environmental laws and certain international laws also govern climate change in providing justice to Mother Nature. The depletion rate of climate is so intense that

development. Institute for Global Environmental Strategies, (June), 0–10. Retrieved from https://www.jstor.org/stable/resrep02904.

34 Nathan, A. J., & Scobell, A. (2012, September). How China sees America. Foreign Affairs. https://doi.org/10.1017/CBO9781107415324.004.

35 DeShazo, J. J., & Freeman, J. (2007). Timing and form of federal regulation.

it makes us wonder, what will be the scenario in say 2030? How are we supposed to sustain the environment and climate if we do not start protecting it now, as it is now or never?'

According to Grantham Research Institute on Climate Change and the Environment and the Sabin Center on Climate Change Law, there exist more than 1200 policies and relevant laws mapped by more than 164 countries, which leads to the emission of global gases by 95%.[36] For many years we have been allocating resources, addressing probable harms, laying guidelines, etc. but why are we still not able to protect the climate? Is it the political discourse or people nowadays have been so selfish that they even forget that wasting/degrading resources 'now' will make their old age 'suffer?'

Environmental Laws are the necessity of 'now' and preservation is a must. Certain countries have strongly believed in preservation and are working towards the preservation of a 'better future' whereas certain countries are still not serious enough for 'conservation and preservation.'

COUNTRY SPECIFIC LAWS:

1. CHINA – China is the most populated country in the world as per the US Census Bureau Current Population (1st July 2020),[37] the damage and damage control is presumed to be high from the country.

- **Law on the Prevention and Control of Atmospheric Pollution, 2016**

China, since the 1970s, has been working towards adopting modern management techniques to prevent environmental degradation. The country in 1972 participated in the Stockholm Conference based on Human Environment which focused on eliminating the pollution from its roots.[38]

Article 1 of statute[39] deals with needs, methods, and provisions to prevent atmospheric pollution to protect, safeguard health, and improve sustainable development for the betterment of society. The statute imposes restrictions on pollution through burning coal and fossils, motor vehicles, industrial pollution, etc. the main components of which are sulfur dioxide, nitrogen, greenhouse gases, ammonia, etc. (Article 2).

China, to promote a clean environment, better air quality index[40], imposed a ban on coal for personal household uses in 2015 mentioned in Chapter IV, Section 1. The statutes also lay provisions to restrict the use of components such as sulfur, olefin, benzene that are the major pollutants as per Article 13. The state, as mentioned in Article 50, is also working towards adopting measures to impose taxation and fiscal policy to ensure that motor-vehicles, vessels, roads, and non-road types of machinery, which generally have a high oil consumption are reduced to the possible extent.

The Statute enforced in December 2016 is all set to show a fair picture and be transparent about the statistics of environmental degradation to its public at large by implementing statutes and keeping a close check on all the agencies to provide its native the best they can do in terms of good air quality, sustainable development, innovative techniques to control pollution, etc.

- **Renewable Energy Act, 2009**

Statute[41] deals with the judicious use of renewable energy, where the government owns a duty for the development and use of renewable sources of energy. The act ensures that a close check (monitor) of the energy would be maintained and research and development would be initiated to decrease the use of non-renewable resources and therefore protect the environment. China aims to achieve a 15% energy source to be renewable energy by the year 2020.

- **Energy Conservation Laws, 2007**

The National People of Congress ensures to monitor and strengthen the energy utilization and conservation techniques used by China. The techniques would not only promote efficient use but also adopt various new techniques in the conservation of energy.[42]

- **Forest Law of People's Republic of China, 1998**

Chapter IV of statute[43] ensures that any damage which is caused to the environment due to afforestation or exploitation of resources must be protected by the cultivation of more trees, protection of forests, climate regulation is ensured, water storage is improved, afforestation is promoted, etc.

36 Carbon Brief Cler on Climate. (2020.December).https://www.carbonbrief.org/mapped-climate-change-laws-around-world

37 United States Census Bureau. U.S. and World Population Clock. (2020. December).https://www.census.gov/popclock/.

38 (He et al., 2012:29).

39 Law on the Prevention and Control of Atmospheric Pollution,2016 (CHIN-PR) (cn).

40 Attri, S. D., & Rathore, L. S. (2010). The Impact of Climate Change on the Agricultural Sector: Implications of the Agro - Industry for Low Carbon, Green Growth Strategy and Roadmap for the East Asian Region Table of Contents. International Journal of Climatology, 23, 693–705.

41 Renewable Energy Act,2009 (CHIN-PR) (cn).

42 Energy Conservation Laws,2007(CHIN-PR) (cn).

43 Forest Law of People's Republic of China,1998(CHIN-PR) (cn).

2. INDIA

India is provided the status of the second most populated country in the world as per the U.S. Census Bureau Current Population (1st July 2020),[44] where the country faces issues related to air pollution, water pollution, noise pollution, etc.

- **Compensatory Afforestation Fund (CAF) Act, 2016**

The act[45] so formulated provides that in a situation where the forest land is converted into non-forest land for any purpose, be it mining, setting up of industry, etc. the purchasing agency is thus obligated to pay for planting trees/forest equivalent to the forest land so purchased by the user agency. The government transferred an amount of ₹47,436 crores to 27 states for the CAF Fund.[46] Moreover, the government has taken initiative to create more job opportunities amongst indigenous tribes which helps in the protection of forests and ecosystems.

- **Energy Conservation Act, 2001**

Act[47] lays down guidelines and norms which specify the standard use prescribed for consuming energy and are provided with the energy-saving certificates accordingly. Down the line, India has been actively building plans and setting targets for energy efficiency. The 2008 National Climate Action Plan lays down the judicious use of energy, further, ensuring that big energy-consuming industries get an energy audit as prescribed by the law to ensure that there is no wastage of resources. The last amendment in the act took place in the year 2010. The Government also aims in achieving the average fleet fuel efficiency by 3% in 2021-2022 (as per Government Gazette Notification, 30 January 2014).

- **Disaster Management Act, 2005**

The act[48] deals with reliefs and management post any man-made or natural disaster in the country, with the main aim of preparedness and mitigation. The act classifies areas into pro-active zones or less active zones prone to disasters so that the State, as well as the Central Government, could take corrective measures and measure the possible extent of damage that can occur.

The Disaster Management Act includes within its ambit 'epidemics' as well. In the year 2006 when around 3500 people were adversely affected by the dengue disease, the act ensured a check on such ordeal. Similarly, the outbreak of the Corona Virus in 2020, the act as well as the country is still trying to overcome this phase.

- **Electricity Act, 2003**

The Indian Electricity Act, 1910, the Electricity (Supply) Act, 1948, and the Electricity Regulatory Commission Act, 1998 were subsumed in Electricity Act 2003 with the motive to harmonize and rationalize the provisions to consolidate and coordinate the energy distribution, transmission, generation, trade and use of electricity by the consumers.

Act[49] has also come up with the National Electricity Policy with the main objectives such as providing easily accessible electricity, easy availability of power, the supply of standard and reliable power at reasonable rates, and protecting the interest of the consumers.

3. CZECH REPUBLIC

The Czech Republic has been working towards protecting the environment and has come up with many statutes, laws, and provisions which would help them to keep a check on harm caused to the environment if any.

- **National Energy and Climate Plan of the Czech Republic,2019**

The European Union adopted in 2019 has come up with mandatory guidelines to control greenhouse gas emissions by formulating a ten-year integrated plan that is the National Energy and Climate Plan. Not only controlling and maintaining a check on greenhouse gasses the plan also ensures that the use of a renewable source of energy is promoted and applied.[50]

- **Adaptation strategy to climate change in the Czech Republic, 2015**

The impact of climate change and its legislative and economic consequences are strategized to prevent environmental and public health. Strategy[51] also lays focus on how to prevent forests, water level, and its regime, to take corrective measures to control population, emphasize on biodiversity and ecosystem, and promote tour and tourism. In a nutshell, the strategy emphasizes the measure to control the population to protect the climate of the country.

- **Clean Air Act, 2012**

Act[52] provides for the minimum inclusion of biofuels contents used for transportation to achieve the tar-

44 United States Census Bureau. U.S. and World Population Clock. (2020. December).https://www.census.gov/popclock/.
45 Compensatory Afforestation Fund(CAF) Act, 2016 (IN) (in).
46 (Press Information Bureau, n.d.).
47 Energy Conservation Act, 2001 (IN) (in).
48 Disaster Management Act, 2005(IN) (in).
49 Electricity Act,2003 (IN) (in).
50 National Energy and Climate Plan of the Czech Republic,2019 (CZE) (cz).
51 Adaptation strategy to climate change in the Czech Republic, 2015 (CZE) (cz).
52 Clean Air Act, 2012(CZE) (cz).

get of transfer of biofuel in the volume requirement by 0.2%. The act ensures the composition of biofuels to be included at 4.1% in the case of gasoline and 6% in the case of diesel.

- **The Energy Act, 2000**

The act[53] provides for provisions regulating the use of energy across the country so that the natives enjoy easy access to energy and withstand consumer needs and interests thereon. The act promotes the use of renewable sources of energy and encourages the use of electricity producers a preferential connection for renewable electricity.

4. UNITED STATES OF AMERICA

The global climate has been adversely affected due to the country for over years. The sensitivity of the environment is catered to and protected by enforcing certain laws and regulations across the countries which are as follows:

- **Stafford Disaster Relief and Emergency Assistance Act, 1988**

Act[54] was amended in the year 2016 to formulate legislation to respond to disasters if any. The act ensures that the government is prepared to assist in situations of disasters. Further, a deep analysis is done in the statute in regards to procedures that assist in a disaster, and the emergency assistance for the same is ensured by the government to its natives.

- **Duncan Hunter National Defense Authorisation Act, Fiscal Year 2009**

Act[55] provides for the amount to be invested in achieving energy efficiency, renewable sources of energy, or any other source of energy that can be utilized in armed forces. The main aim of the act is to reduce the consumption of fuels in the battles, rather than come up with alternatives that would utilize less of a non-renewable source of energy and more renewable source of energy.

- **Clean Water Act, 1972**

Act[56] aims at protecting the water and water bodies of the country. The act ensures that the quality of water is restored and water pollution is controlled. The act provides for comprehensive analysis and research to find out the main causes of water pollution and how can they work on its prevention by considering the exploitation rate of non-renewable sources such as fossils, forests, etc.

INTERNATIONAL ENVIRONMENTAL LAWS

International Environmental Law is a subset of Public International Law with the main motive to protect the environment from pollution and develop frameworks to protect the natural resources and promote sustainable development with a motive to reduce ozone layer depletion, emission of greenhouse gasses, protecting wildlife and the environment, control climate change, etc. Chapter 1 of the law majorly focuses on how to take precautionary and preventive measures to reduce the risk of degradation of the environment worldwide.[57]

The International Environment Laws include two major declarations that were formulated to leave a positive impact on the environment and the natives to protect the former. The two major declarations, The Declaration of the United Nations Conference on the Human Environment (the 1972 Stockholm Declaration) with the main aim to preserve and enhance the human environment and The Rio Declaration on Environment and Development discussed at the United Nations Conference on Environment and Development which primarily focused on sustainable development.

Elaborating further, many International Treaties were signed to conserve and protect the environment. The list is as follows:

1. **Geneva Convention on Long-Range Transboundary Air Pollution (1979):** The convention majorly focuses on dealing with issues relating to air pollution and how corrective measures can be taken to prevent the environment and climate from degrading.
2. **Convention for the Protection of the Ozone Layer – Vienna Convention (1985):** The convention aims at reducing the use as well as the production of chlorofluorocarbons which lead to depletion of the ozone layer, further causing diseases such as skin cancer, etc.
3. **International Convention on Civil Liability for Bunker Oil Pollution Damage (2001):** This convention ensures that pollution caused by the oil carrying fuel ships would be liable to pay adequate and effective compensation to the affected party/person.[58]

53 The Energy Act,2000 (CZE) (cz).

54 Stafford Disaster Relief and Emergency Assistance Act, 1988 (us).

55 Duncan Hunter National Defense Authorisation Act, Fiscal Year 2009 (us).

56 Clean Water Act, 1972 (us).

57 Patricia Birnie, Alan Boyle and Catherine Redgwell (eds), International Law and the Environment (3rd edn, Oxford University Press, 2009) 39.

58 Ling Zhu, January 2007, International Convention on Civil Liability for Bunker Oil Pollution Damage, 2001 – Liability and Insurance Aspects.

4. **Stockholm Convention on Persistent Organic Pollutants (2001):** The convention aims at protecting the health of humans and the environment from organic pollutants. The organic pollutants such as Persistent Organic Pollutants leads to diseases such as cancer, damaging of peripheral nervous systems, reproductive system, etc.
5. **Convention for the Prevention of Marine Pollution from Land-Based Sources (1974) & „OSPAR" Convention (1992):** The convention primarily focuses on the environment/ ecosystem related to marine. This convention focuses on saving the water bodies as well as the wildlife existing in those water bodies to prevent overfishing, reduction of bycatch of porpoise, reducing the disposal of oil, mercury, organochlorines in the marine environment, etc.
6. **Basel Convention Amendment (1995):** The convention is based on reducing the disposal and emissions of 'hazardous waste' which harms the health of the public at large and on the environment. Article 8 and Article 9 of the convention states that every country must treat the waste before to ensure that the disposal is safe.
7. **United Nations Environment Programme:** The convention focuses on the promotion and protection of a healthy environment, with numerous project namely:

- Clean the World is a community-based initiative to recycle, reuse, reduce the existing resources with a major goal to clean and conserve the environment;
- Earth Hour revolves around reducing the use of energy and carbon components;
- The Billion Tree Campaign initiative was inspired by the founder of the Green Belt Movement and the Nobel Peace Prize Winner Laureate Wangari Maathai with a motive to plant a billion trees by the year 2007 to support biodiversity.

8. **United Nations Framework Convention on Climate Change:** The main aim of this convention is to achieve a stable position where the environment is free from hazardous emission of greenhouse gasses and to minimize human interference in the climate system that has led to adverse impacts on climate.
9. **The United Nations Commission on Sustainable Development (CSD):** This Commission was developed in 1992 to assist and follow up the United Nations Conference on Environment and Development (UNCED), with the main responsibility to ensure proper implementation of Agenda 21 and Rio Declaration on Environment and Development. Agenda 21 aimed at preventing the environment from damaging, preventing natives worldwide from poverty and harmful diseases, and mainly to achieve global sustainable development. On the other hand, the Rio Declaration aims at enhancing the active participation of the natives to successfully achieve sustainable development by conserving non-renewable or natural resources from getting extinct.

ADMINISTRATIVE LAWS

The law with the main aim to govern the administrative actions of a particular province or country is defined as administrative laws that include actions relating to the formulation of laws to supervising and administrating the public authorities as well as the public at large for the proper implementation of such laws.

Administrative laws and Climate Change are correlative in the sense that it is due to the lack of proper administration of the laws that are implemented in the province/country that the environment is continuously ignored. The emissions of greenhouse gasses, the increase in pollution, and the excessive use of renewable sources are due to the inefficiency on the part of the government. We noticed earlier by analyzing laws related to the environment of certain countries that there exist laws to protect and preserve the environment, but on the other hand, the administration has been a weak link where not only the private institutions/corporations but also the public authorities and the people at large have been wasting blindly. If the government were strict in taking action, to place the environment above personal needs, the environment would never face such drastic harm.

In a Columbia Review, Edition of 1975,[59] it was mentioned that there is a need to create an inter-relationship amongst procedural and substantive administrative laws so that the perception of individuals and people at large shifts from a holistic/traditional approach to a more practical and conventional one. The term procedural law means that whether a particular case or situation goes from the procedure prescribed under the laws of the specific country starting from trials to punishments whereas the substantive law

59 Gellhorn, E., & Robinson, G. (1975). Perspectives on Administrative Law. Columbia Law Review, 75(4), 771-799. doi:10.2307/1121686.

means that the facts of the case play a major role in defining the punishment for the crime so committed.

In the case of Massachusetts v. EPA,[60] it was held that global warming, even though there does not exist certain pollutants in the provisions, does not provide to be termed as air pollutants. The procedural rights must ensure that the emission of pollutants responsible for global warming is anticipated as it can cause harm to the health of the public and their welfare. Further, in the case of Util. Air Regulatory Group. v. Envtl. Prot. Agency[61] it was held that the Clean Air Act must be reasonably interpreted and the greenhouse gas emission if permitted, must be based on requirements provided there exist best technologies to control pollution so caused by the pollutants. The cases above show a correlation of interpretation and procedural law as the basis of the decision.

INTERNATIONAL TRADE LAWS

The need of the hour is to bring both environmental and trade agreements to go hand in hand. Meaning thereby, the trade agreements must confirm that minimal loss to the environment and promote sustainable development and promote trade on a global level. It is generally found that the imported goods have an upper hand on domestic goods. The removal of trade barriers would not only reduce the rates of tariffs but will also promote goods that favor/benefit the environment. Such goods will help in protecting not only the environment but also climate change in a recent study by the World Bank in relation to Climate change stated that removing such barriers will result in a 14% increase in trade. This will reduce the cost of the price of the goods and services and increase the supply for the same in the market.

Article 3.5 of the UNFCCC and Article 2.3 of the Kyoto Protocol state that no unjustified or arbitrary restriction must be imposed on the international trade agreements, but such agreements implemented must have a positive impact on society as well as the environment.

The Committee on Technical Barriers to Trade (TBT Committee) aims at providing for technical discussions on the measures adopted by the government related to Climate Change. The agreement acts as a bridge to remove the gap between trade and its harmonization that the committee authorized, keeps a check on international trade agreements so that unnecessary provisions do not act as an obstacle for the trade overseas, provided that the required provisions for the reduction in greenhouse gases, etc. are abided. Moreover, the Committee on Trade and Environment (CTE) also ensures that a just balance is created between environmental regulations and international trade. However, there exist certain provisions under the international trade laws which tend to overlook the adverse impacts they can have on the environment and climate change.

The Agreement on Subsidies and Countervailing Measures (SCM Agreement) with the main purpose to regulate subsidies and to look into matters where an injury is caused by subsidized imports if any. Article 8 of the agreement earlier included 'non-actionable' subsidies which were granted for certain legitimate purposes including environmental health, but the provision expired in the year 1999, with no signs of renewal even in 2020. Further, the degree of uncertainty tends to increase where the states may or may not allow for unilateral trade-related climate change measures in the trade agreement.

CLIMATE AGREEMENTS BETWEEN COUNTRIES: JOURNEY FROM KYOTO PROTOCOL TO PARIS AGREEMENT

The journey of evolution to protect the Climate began in 1992 at the Rio de Janeiro Earth Summit which was launched by the United Nations Framework on Climate Change. The efforts to protect the climate from changing have evolved ever since then. The timeline is discussed as follows:

1. **UNFCCC[62]:** The agreement focused on setting-up long-term objectives to avoid any kind of human intervention which directly or indirectly proves to be harmful to the climate system. Moreover, the signatories to this agreement aimed at reducing the emission of greenhouse gasses, to contribute addressing the responsibilities to protect the climate, formulating the capacity to create an obligation towards climate protection. The agreement suggests the developed countries help the developing nations in protecting the climate and help them to achieve so.
2. **KYOTO PROTOCOL[63]:** It was introduced to

60 Massachusetts v. EPA (2007) 549 U.S. 497, 127 S. Ct. 1438.

61 Util. Air Regulatory Group. v. Envtl. Prot. Agency, (2014) 573 U.S. 30.

62 United Nations Climate Change. (n.d.) https://unfccc.int/process-and-meetings/the-convention/what-is-the-united-nations-framework-convention-on-climate-change.

63 Kyoto Protocol. (2020.December.). https://unfccc.int/

operate the United Nations Framework on Climate Change and aimed to reduce the target of greenhouse gas emissions both individually and country-wise. The protocol ensured that countries abide by policies and regulations to protect the climate from changing drastically. At the Conference of Parties (COP) First Session, 1995[64] binding targets were formulated that restricted the emission of greenhouse gases. Later, in 1997, the US came up with different mechanisms to allow emissions, and the provisions were not ratified.

3. **COPENHAGEN AND CANCUN AGREEMENTS:** In 2007, the Bali Action Plan was formulated to ensure the sustained implementation of the agreements provided by UNFCCC. The agreement was adopted by more than 100 countries in the Conference of Parties Fifteenth Session, 2009. It aimed to achieve the goal to reduce and limit the temperature by 2º Celsius at a global level and also to mobilize a Green Climate Fund by 2020. Further, in the Conference of Parties Sixteenth Session,[65] the Cancun Agreement[66] was formulated to govern the implementation of the Copenhagen Agreements.
4. **PARIS AGREEMENT[67]:** In the Conference of Parties Twenty-first Session, 2015[68] that took place in Paris represented a hybrid approach of the Kyoto Protocol as well as the Copenhagen and Cancun Agreements. The said Paris Agreement is majorly focused on resolving issues related to climate change and how it can be prevented. The agreement aims at assisting the developing nations to take corrective measures regarding the same.

In the administration run by Donald Trump, he withdrew from the Paris Agreement. However, after the fresh elections of 2020 in the US, Joe Biden has given his affirmations to re-enter into the Paris Agreement soon.

COMPARISON OF CLIMATE CHANGE POLICIES ACROSS THE GLOBE

Certain countries have taken commendable actions in respect of protecting the climate. These countries are not only formulating new policies or provisions but working towards implementing the same with a reduced error rate so that positive results are derived. The need for awareness is successfully created, and the results are yet to be seen. The more countries invest in conserving Climate Change, the more will the country grow be it in terms of economic or in terms of sociological growth. A few policies which gave these countries an upper hand over the others are as follows:

1. **Spain's Integrated National Energy and Climate Plan for 2021-2030[69]:** In 2020, the European Union on the aid and advice of its members formulated the National Energy and Climate Plan intending to control emissions of greenhouse gasses. The key highlights of the plan work towards reducing emissions of hazardous greenhouse gases emitted from transports, factories, etc. to become a carbon-neutral country by the end of 2050. Moreover, the plan focuses on the promotion and use of renewable sources of energy instead of non-renewable sources of energy to ensure efficiency in energy consumption, to promote innovation and sustainable development.
2. **Ireland's National Energy and Climate Plan, 2020[70]:** The National Energy and Climate Plan ensures that the country works toward achieving a reduction in carbon emissions by eliminating the use of plastics, promoting the use of domestic products with a long shelf life, reuse or recycle of goods, etc. The plan also lays focus on the use of the renewable source of energy that includes wind energy, solar energy, and bio-energy.
3. **Energy Policy of Poland until 2030 and 2040 (PEP 2030 and PEP 2040)[71]:** The policy aims

process-and-meetings/the-kyoto-protocol/what-is-the-kyoto-protocol/kyoto-protocol-targets-for-the-first-commitment-period.

64 Conference of Parties (COP) First session, 1995. https://unfccc.int/cop5/resource/cop1.html.

65 Conference of Parties Sixteenth Session. http://c2es.org/content/cop-16-cancun/.

66 Cancun Agreement. https://unfccc.int/process/conferences/the-big-picture/milestones/the-cancun-agreements.

67 Paris Agreement. (2020.December). https://unfccc.int/sites/default/files/english_paris_agreement.pdf.

68 Conference of Parties Twenty-first Session, 2015. http://www.c2es.org/content/cop-21-paris/.

69 Integrated National Energy and Climate Change Plan2021-2030.(2020.December).https://ec.europa.eu/energy/sites/ener/files/documents/es_final_necp_main_en.pdf.

70 Department of the Environment, Climate and Communications. (2020. December) https://www.gov.ie/en/organisation/department-of-the-environment-climate-and-communications/?referrer=http://www.dccae.gov.ie/en-ie/energy/publications/Pages/National-Energy--Climate-Plan-(NECP)-2021-2030.aspx.

71 Energy Policy of Poland until 2040 (EPP 2040). (2020. December) https://www.gov.pl/attachment/376a6254-

at reducing the emission of greenhouse gasses by promoting renewable sources of energy by 20 percent in 2030, grid modernization, energy security, availability of resources, etc. The policy aims at promoting biofuels as the source of energy that can be used in industries and the transportation market by 10%.

4. **Sustainability Bond Framework, Luxembourg 2020[72]:** The first European country to launch such a type of Sustainable Bond Framework is Luxembourg. It aims at providing sustainable assets to the investors looking forward to diversifying their opportunity and the market share, where the bonds are classified into green bonds, social bonds, and sustainability bonds that would not only reduce carbon emission but would work towards achieving public health, green buildings, economic and social development, etc.
5. **Climate Change Agreements, 2001 (Amended in 2020)[73]:** The agreement is an initiative by the UK government wherein there is a deduction in taxes named Climate Change Levy (CCL) that can be claimed if the industry commits to reduce the use of energy and instead use renewable sources. This deduction is purely voluntary in nature, that is, depending on the industrialists to claim such benefits or not. The main aim of the agreement is to motivate the industrialists to utilize less energy provided such a target is achieved, the overall energy consumption will reduce by 25 percent by 2020.

After the introduction of the Paris Agreement, it was formulated and analyzed that a few countries are taking initiative in formulating laws to protect the global issue of climate change. The Climate Change Performance Index ranks Sweden (Rank 4), Denmark (Rank 5), Morocco (Rank 6) for performing quite well towards the protection of climate change whereas countries like the USA (Rank 61), Chinese Taipei (Rank 59) showed low performance in protection towards Climate Change.

China has been ranked 30 by the Climate Change Performance Index (CCPI) which means that China is amongst the countries rated with medium performance but still lags in reducing the emission of carbon and other greenhouse gases in comparison to countries like Sweden and is required to invest extra efforts to get below the 2° Celsius Compatibility Line. As discussed in the research earlier, the world at large cannot withstand more than a 2° Celsius rise in the overall temperature.[74] Therefore, the Climate Change Performance Index takes into consideration the 2° Celsius Compatibility Line. Further, countries like Czech Republic that earlier ranked 32 as per CCPI dropped down to 43rd Rank due to low performance in the National as well as International Climate Policy.[75]

On the other hand, developing nations like India have shown high performance in controlling greenhouse gas emission (Ranked 11) but had an average performance as compared to other countries in utilizing renewable energies.[76] Countries like the US and Saudi Arabia require their immediate attention towards National as well as International Climate Policies in both emission of greenhouse gases as well as utilizing renewable energy.[77]

SETTING UP OF GOALS FOR DEVELOPMENT

The development will not solely come from the formulation or implementation of laws but when people join their hands to protect the world from climate changes. The focus must shift to the question of why are the people not ready for trivial changes in their living which could prevent the climate from changing?

The need is to create awareness amongst people and explain why we need to protect the environment and what will be its adverse effects on them. It is time to realize that set aside the future generation, but the rate at which the climate is changing rapidly, the indi-

2b6d-4406-a3a5-a0435d18be0f.

72 The Luxembourg Government. (2020.December) https://gouvernement.lu/en/actualites/toutes_actualites/communiques/2020/09-septembre/02-cadre-obligations-durables.html.

73 Stavins R., J. Zou, T. Brewer, M. Conte Grand, M. den Elzen, M. Finus, J. Gupta, N. Höhne, M.-K. Lee, A. Michaelowa, M. Paterson, K. Ramakrishna, G. Wen, J. Wiener, and H. Winkler, 2014: International Cooperation: Agreements and Instruments. In: Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Edenhofer, O., R. Pichs-Madruga, Y. Sokona, E. Farahani, S. Kadner, K. Seyboth, A. Adler, I. Baum, S. Brunner, P. Eickemeier, B. Kriemann, J. Savolainen, S. Schlömer, C. von Stechow, T. Zwickel and J.C. Minx (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

74 Jan Burck, Ursula Hagen, Niklas Höhne, Leonardo Nascimento, Christoph Bals, 2020, Climate Change Performance Index, https://www.climate-change-performance-index.org/sites/default/files/documents/ccpi-2020-results-the_climate_change_performance_index.pdf

75 Climate Change Performance Index, 2020.

76 Climate Change Performance Index, 2020.

77 Climate Change Performance Index, 2020.

viduals will not be able to live the rest of their lives in a clean environment. The need is to understand the impact of climate change not only on our day-to-day activity but also on our health.

AMENDMENT OF LAWS

We cannot straight away deny that there is a shortage of laws or policies. Every country has laws and policies which are based on climate change, conserving energy, preventing pollution, promoting renewable energy and biofuels, etc. But we do lack somewhere, be it setting up of goals, implementation of rules and regulations, or the reviewing of such provisions.

It is suggested that countries take the adverse situation of the rapid deterioration pretty seriously. The countries must focus on preserving the environment. The only way to preserve the climate changes is to take immediate actions. Small things make a big difference. The government must try to formulate laws that are easy to implement and comply with. The policy framers need to do a deep analysis of their own country and derive the statistics relating to what are the major pollutants emitted in the specific country, why are those pollutants still in use and why are people not taking actions to preserve the environment.

The solution to the problems affecting climate lies in these „why's." The targets must be set in a manner that they are practicable and can be achieved. Small targets must be set initially. For example, a country 'X' can set a target to reduce say 1% emission of greenhouse gases in one year. The positive side of setting smaller targets is that both the framers and the followers of the policy would feel that such a target can be attained easily and hence would put their efforts into achieving the same rather than setting up higher standards.

Another most important measure required to protect the Climate is by creating awareness and educating the natives of the country. Being selfish and continuously polluting would bring no benefits. Even if some countries act carelessly by not caring about climate change will even nullify the hard work of the countries who are working day and night to control climate changes. There is a need to understand the fact that the climate does not affect a single individual but has a global effect. Therefore, the goals must be such that they are attainable and short term so that the implementation and check on such policies and goals can be achieved easily.

CONCLUSION

Changing weather patterns, disruption to natural resources, distressed behavioral changes have a detrimental effect on not only human beings but on the flora and fauna at large. The skyrocketed population statistics by U.S. Census Bureau Current Population (2020) mentions China to be the most populated country followed by India across the globe. Laws, statutes, and provisions affirm 'what possibly will happen.' The attribution of science in legal aspects entails a descriptive analysis of policies formulated, plans mapped out, and how litigation would assist the former.

The ever-increasing greed of wasting fossil fuels and energy consumption tries to force scientific impossibility to measure the abundant loss to the climate. Where countries like Peru, Singapore, and Romania are investing their best efforts, countries like the United States of America begs to differ on the scientific effects of climate changes. The political altercation in the USA continues the environmental degradation and promotes amongst the masses.

Scientific data is the prime source that would illustrate the national carbon emissions, attributing the recent data would assist in framing budgets to control the emissions. The attribution of scientific data would be fact-specific and result-oriented. The Paris Agreement happens to work on the same guidelines. The Paris Agreement tries to assign a standard above which the countries must refrain from emitting greenhouse gasses. Further, it is strongly denied that there aren't any laws to conserve the drastic climate changes. From having conventions for protecting Ozone Layer Depletion (Vienna Convention) to conventions to reduce marine and land pollution (OSPAR Convention). New technological up-gradations are adding to the schemes for protection as well. Innovation is becoming a well-needed change in society. Recycling plastic, alternative uses of non-renewable resources are a major contribution.

Courtrooms and the outside world are poles apart. Yet, the courts and the executives try to bridge the gap by duly considering the scientific attribution on matters related to climate change. The liability to protect the environment is 'joint and several', that is individuals are responsible for their actions and the actions of others as well.

At this juncture, we need to set up a comprehensive plan of action framed at an international level that can be easily executed at local levels providing enough space for flexibility to reduce carbon footprint. This can be something as simple as opening a world bank of recycle-able. Garbage should not be put to waste; it can be a resource in itself.

NOTES:

1. The Intergovernmental Panel on Climate Change. (In English)
2. Climate Change and the Law [1] [2] Human Activities, in the United States and Elsewhere, Contribute No Longer Be Avoided. 3 On an International Level, for Example, the In – *Professor and Bock Chair in Agricultural Law, Department of Agricultural, 2010[3]" (In English)
3. European Environment Agency (EEA), 2019. (In English)
4. C.A.S. Hall et al. / Energy Policy 64 (2014) 141-152. (In English)
5. United Nation Climate Action Summit, 2019. (In English)
6. Hu, Y., Hall, C., Wang, J., Feng, L., Poisson, A., 2013. Energy return on investment (EROI) on China's conventional fossil fuels: historical and future trends. Energy, 1–13. (In English)
7. IUCN (International Union for Conservation of Nature) (2020. December) https://www.iucn.org (In English)
8. Vaughan, D.G., J.C. Comiso, I. Allison, J. Carrasco, G. Kaser, R. Kwok, P. Mote, T. Murray, F. Paul, J. Ren, E. Rignot, O. Solomina, K. Steffen and T. Zhang, 2013: Observations: Cryosphere. In: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5_Chapter04_FINAL.pdf. P.319-320. (In English)
9. Muller R. (2013, June 3). Why We Need to Help the Chinese Frack. CNBC. Retrieved November 11, 2014, from https://www.cnbc.com/id/100784859# (In English)
10. Longo, M., Saatchi, S., Keller, M., Bowman, K., Ferraz, A., Moorcroft, P. R., et al. (2020). Impacts of degradation on water, energy, and carbon cycling of the Amazon tropical forests. Journal of Geophysical Research: Biogeosciences, 125, e2020JG005677. https://doi.org/10.1029/2020JG005677 (In English)
11. The Intergovernmental Panel on Climate Change. (2020, December).https://www.ipcc.ch/working-group/wg1/ (In English)
12. The Intergovernmental Panel on Climate Change. (2020.December).https://www.ipcc.ch/working-group/wg2/. (In English)
13. The Intergovernmental Panel on Climate Change. (2020.December). https://www.ipcc.ch/working-group/wg3/. (In English)
14. The Intergovernmental Panel on Climate Change. (2020.December). https://www.ipcc.ch/working-group/tfi/ (In English)
15. United Nations Climate Change. (2020.December). https://unfccc.int/ (In English)
16. Technology Transfers Under the United Nations Framework Convention on Climate Change. 2006. (In English)
17. Leach & Shapiro, 1986. (In English)
18. United Nations Children's Fund (UNICEF) (2007. December). https://www.unicef.org/publications/files/Climate_Change_and_Children.pdf. (In English)
19. International Groundwater Resources Assessment Centre. (2020. December) (In English)
20. NAAS, 2000. (In English)
21. Attri & Rathore, 2010. (In English)
22. Evans, G. W. (2019, January 4). Projected Behavioral Impacts of Global Climate Change. Annual Review of Psychology. Annual Reviews Inc. https://doi.org/10.1146/annurev-psych-010418-103023 (In English)
23. European Wildlife. (2020. December). https://www.eurowildlife.org/climate-change/ (In English)
24. Convention on the Conservation of Migratory Species of Wild Animals. Half of All Species Are on the Move—And We're Feeling It. (2020. December). https://www.cms.int/en/news/half-all-species-are-move%E2%80%94and-were-feeling-it. (In English)
25. I. H. Myers-Smith, B. C. Forbes, M. Wilmking, M. Hallinger, T. Lantz, D. Blok, K. D. Tape, M. Macias-Fauria, U. Sass-Klaassen, E. Lévesque, S. Boudreau, P. Ropars, L. Hermanutz, A. Trant, L. S. Collier, S. Weijers, J. Rozema, S. A. Rayback, N. M. Schmidt, G. Schaepman-Strub, S. Wipf, C. Rixen, C. B. Ménard, S. Venn, S. Goetz, L. Andreu-Hayles, S. Elmendorf, V. Ravolainen, J. Welker, P. Grogan, H. E. Epstein, D. S. Hik, Shrub expansion in tundra ecosystems: Dynamics, impacts and research priorities. Environ. Res. Lett. 6, 045509 (2011). (In English)
26. F. I. Pugnaire, J. A. Morillo, J. Peñuelas, P. B. Reich, R. D. Bardgett, A. Gaxiola, D. A. Wardle, W. H. Van Der Putten, Climate change effects on plant-soil feedback and consequences for biodiversity and functioning of terrestrial ecosystems. Sci. Adv. 5, eaaz 1834 (2019) Downloaded. (In English)

27. Suseela, V., Tharayil, N., Xing, B., & Dukes, J. S. (2015). Warming and drought differentially influence the production and resorption of elemental and metabolic nitrogen pools in Quercus rubra. Global Change Biology, 21(11), 4177–4195. https://doi.org/10.1111/gcb.13033. (In English)
28. Peguero, G., Sol, D., Arnedo, M., Petersen, H., Salmon, S., Ponge, J. F. Peñuelas, J. (2019). Fast attrition of springtail communities by experimental drought and richness–decomposition relationships across Europe. Global Change Biology, 25(8), 2727–2738. https://doi.org/10.1111/gcb.14685. (In English)
29. Pradyumna, A., & Guinto, R. (2016, January 30). Climate change and health. The Lancet. Lancet Publishing Group. https://doi.org/10.1016/S0140-6736(16)00171-9. (In English)
30. Wing, S., Horton, R. A., Marshall, S. W., Thu, K., Tajik, M., Schinasi, L., & Schiffman, S. S. (2008). Air pollution and odor in communities near industrial swine operations. Environmental Health Perspectives, 116(10), 1362–1368. https://doi.org/10.1289/ehp.11250. (In English)
31. Gregory et al. (1999). (In English)
32. Gregory, P. J., Ingram, J. S. I., & Brklacich, M. (2005). Climate change and food security. In Philosophical Transactions of the Royal Society B: Biological Sciences (Vol. 360, pp. 2139–2148). Royal Society. https://doi.org/10.1098/rstb.2005.1745. (In English)
33. Mori, N., & Chiba, Y. (2017). Impact of climate change– transforming business behaviour in favour of sustainable development. Institute for Global Environmental Strategies, (June), 0–10. Retrieved from https://www.jstor.org/stable/resrep02904. (In English)
34. Nathan, A. J., & Scobell, A. (2012, September). How China sees America. Foreign Affairs. https://doi.org/10.1017/CBO9781107415324.004. (In English)
35. DeShazo, J. J., & Freeman, J. (2007). Timing and form of federal regulation. (In English)
36. Carbon Brief Cler on Climate. (2020.December).https://www.carbonbrief.org/mapped-climate-change-laws-around-world. (In English)
37. United States Census Bureau. U.S. and World Population Clock. (2020. December).https://www.census.gov/popclock/. (In English)
38. He et al., 2012:29. (In English)
39. Law on the Prevention and Control of Atmospheric Pollution,2016 (CHIN-PR) (cn). (In English)
40. Attri, S. D., & Rathore, L. S. (2010). The Impact of Climate Change on the Agricultural Sector: Implications of the Agro – Industry for Low Carbon, Green Growth Strategy and Roadmap for the East Asian Region Table of Contents. International Journal of Climatology, 23, 693–705. (In English)
41. Renewable Energy Act,2009 (CHIN-PR) (cn). (In English)
42. Energy Conservation Laws,2007(CHIN-PR) (cn). (In English)
43. Forest Law of People's Republic of China,1998(CHIN-PR) (cn). (In English)
44. United States Census Bureau. U.S. and World Population Clock. December).https://www.census.gov/popclock/. (In English)
45. Compensatory Afforestation Fund(CAF) Act, 2016 (IN) (in). (In English)
46. (Press Information Bureau, n.d.). (In English)
47. Energy Conservation Act, 2001 (IN) (in). (In English)
48. Disaster Management Act, 2005(IN) (in). (In English)
49. Electricity Act,2003 (IN) (in). (In English)
50. National Energy and Climate Plan of the Czech Republic,2019 (CZE) (cz). (In English)
51. Adaptation strategy to climate change in the Czech Republic, 2015 (CZE) (cz). (In English)
52. Clean Air Act, 2012(CZE) (cz). (In English)
53. The Energy Act,2000 (CZE) (cz). (In English)
54. Stafford Disaster Relief and Emergency Assistance Act, 1988 (us). (In English)
55. Duncan Hunter National Defense Authorisation Act, Fiscal Year 2009 (us). (In English)
56. Clean Water Act, 1972 (us). (In English)
57. Patricia Birnie, Alan Boyle and Catherine Redgwell (eds), International Law and the Environment (3rd edn, Oxford University Press, 2009) 39. (In English)
58. Ling Zhu, January 2007, International Convention on Civil Liability for Bunker Oil Pollution Damage, 2001 — Liability and Insurance Aspects. (In English)
59. Gellhorn, E., & Robinson, G. (1975). Perspectives on Administrative Law. Columbia Law Review, 75(4), 771-799. doi:10.2307/1121686. (In English)
60. Massachusetts v. EPA (2007) 549 U.S. 497, 127 S. Ct. 1438. (In English)
61. Util. Air Regulatory Group. v. Envtl. Prot. Agency, (2014) 573 U.S. 30. (In English)
62. United Nations Climate Change. (n.d.) https://unfccc.int/process-and-meetings/the-convention/what-is-the-united-nations-framework-convention-on-climate-change. (In English)

63. Kyoto Protocol. (2020.December.). https://unfccc.int/process-and-meetings/the-kyoto-protocol/what-is-the-kyoto-protocol/kyoto-protocol-targets-for-the-first-commitment-period. (In English)
64. Conference of Parties (COP) First session, 1995. https://unfccc.int/cop5/resource/cop1.html. (In English)
65. Conference of Parties Sixteenth Session. http://c2es.org/content/cop-16-cancun/. (In English)
66. Cancun Agreement. https://unfccc.int/process/conferences/the-big-picture/ilestones/the-cancun-agreements. (In English)
67. Paris Agreement. (2020.December). https://unfccc.int/sites/default/files/english_paris_agreement.pdf. (In English)
68. Conference of Parties Twenty-first Session, 2015. http://www.c2es.org/content/cop-21-paris/. (In English)
69. Integrated National Energy and Climate Change Plan2021-2030. (2020.December). https://ec.europa.eu/energy/sites/ener/files/documents/es_final_necp_main_en.pdf. (In English)
70. Department of the Environment, Climate and Communications. (2020. December) https://www.gov.ie/en/organisation/department-of-the-environment-climate-and-communications/?referrer=http://www.dccae.gov.ie/en-ie/energy/publications/Pages/National-Energy--Climate-Plan-(NECP)-2021-2030.aspx. (In English)
71. Energy Policy of Poland until 2040 (EPP 2040). (2020. December) https://www.gov.pl/attachment/376a6254-2b6d-4406-a3a5-a0435d18be0f. (In English)
72. The Luxembourg Government. (2020.December) https://gouvernement.lu/en/actualites/toutes_actualites/communiques/2020/09-septembre/02-cadre-obligations-durables.html. (In English)
73. Stavins R., J. Zou, T. Brewer, M. Conte Grand, M. den Elzen, M. Finus, J. Gupta, N. Höhne, M.-K. Lee, A. Michaelowa, M. Paterson, K. Ramakrishna, G. Wen, J. Wiener, and H. Winkler, 2014: International Cooperation: Agreements and Instruments. In: Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Edenhofer, O., R. Pichs-Madruga, Y. Sokona, E. Farahani, S. Kadner, K. Seyboth, A. Adler, I. Baum, S. Brunner, P. Eickemeier, B. Kriemann, J. Savolainen, S. Schlömer, C. von Stechow, T. Zwickel and J.C. Minx (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. (In English)
74. Jan Burck, Ursula Hagen, Niklas Höhne, Leonardo Nascimento, Christoph Bals, 2020, Climate Change Performance Index, https://www.climate-change-performance-index.org/sites/default/files/documents/ccpi-2020-results-the_climate_change_performance_index.pdf. (In English)
75. Climate Change Performance Index, 2020. (In English).